

Amendments to the Claims:

This list of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claim 1 (currently amended): A longitudinal recording head for use with a magnetic recording medium, the longitudinal recording head comprising:

first and second poles defining a non-uniform gap comprising a ~~hollow~~ cavity, wherein portions of the first and second poles contact each other at an air bearing surface of the recording head and the non-uniform gap has a length that is not constant along a dimension across a track width of the recording head or along a dimension perpendicular to an air bearing surface of the recording head; and

means for concentrating magnetic flux between the first and second poles in the vicinity of the gap to produce a localized magnetic field in the magnetic storage medium.

Claim 2 (canceled)

Claim 3 (previously presented): A longitudinal recording head according to Claim 1, wherein the cavity is curved.

Claim 4 (previously presented): A longitudinal recording head according to Claim 1, wherein the cavity is cylindrical.

Claim 5 (previously presented): A longitudinal recording head according to Claim 1, wherein the cavity comprises a substantially ellipsoidal or hemispherical shape.

Claim 6 (original): A longitudinal recording head according to Claim 5, wherein the cavity comprises at least one inwardly curved wall.

Claim 7 (previously presented): A longitudinal recording head according to Claim 1, wherein the cavity has a length of from about 50 to about 300 nm, a width of from about 50 to about 300 nm, and a depth of from about 50 to about 500 nm.

Claim 8 (currently amended): A longitudinal recording head for use with a magnetic recording medium, the longitudinal recording head comprising:

first and second poles; and

a non-uniform gap defined by the first and second poles, wherein portions of the first and second poles contact each other adjacent an air bearing surface of the recording head and the non-uniform gap has a length that is not constant along a dimension across a track width of the recording head or along a dimension perpendicular to an air bearing surface of the recording head.

Claim 9 (previously presented): A longitudinal recording head according to Claim 8, wherein the non-uniform gap comprises a hollow cavity.

Claim 10 (original): A longitudinal recording head according to Claim 9, wherein the cavity is curved.

Claim 11 (original): A longitudinal recording head according to Claim 9, wherein the cavity is cylindrical.

Claim 12 (original): A longitudinal recording head according to Claim 9, wherein the cavity comprises a substantially ellipsoidal or hemispherical shape.

Claim 13 (original): A longitudinal recording head according to Claim 12, wherein the cavity comprises at least one inwardly curved wall.

Claim 14 (original): A longitudinal recording head according to Claim 9, wherein the cavity has a length of from about 50 to about 300 nm, a width of from about 50 to about 300 nm, and a depth of from about 50 to about 500 nm.

Claims 15-21 (canceled)

Claim 22 (previously presented): A longitudinal recording head according to Claim 1, wherein the cavity comprises a volume from which material from the first pole and/or from the second pole has been removed.

Claims 23-24 (canceled)

Claim 25 (previously presented): A longitudinal recording head according to Claim 8, wherein the non-uniform gap comprises a cavity having a volume from which material from the first pole and/or from the second pole has been removed.

Claim 26 (new): A longitudinal recording head according to Claim 1, wherein the cavity is hollow.

Claim 27 (new): A longitudinal recording head for use with a magnetic recording medium, the longitudinal recording head comprising:

first and second poles defining a non-uniform gap comprising a substantially cylindrical cavity; and

means for concentrating magnetic flux between the first and second poles in the vicinity of the gap to produce a localized magnetic field in the magnetic storage medium.

Claim 28 (new): A longitudinal recording head for use with a magnetic recording medium, the longitudinal recording head comprising:

first and second poles defining a non-uniform gap comprising a substantially ellipsoidal or hemispherical cavity; and

means for concentrating magnetic flux between the first and second poles in the vicinity of the gap to produce a localized magnetic field in the magnetic storage medium.

Claim 29 (new): A longitudinal recording head for use with a magnetic recording medium, the longitudinal recording head comprising:

first and second poles; and

a non-uniform gap comprising a substantially cylindrical cavity defined by the first and second poles, wherein portions of the first and second poles contact each other adjacent an air bearing surface of the recording head.

Claim 30 (new): A longitudinal recording head for use with a magnetic recording medium, the longitudinal recording head comprising:

first and second poles; and

a non-uniform gap comprising a substantially ellipsoidal or hemispherical cavity defined by the first and second poles, wherein portions of the first and second poles contact each other adjacent an air bearing surface of the recording head.